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Using the Translated Concepts About Print Test by Marie Clay With Bilingual Kindergarten Students

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USING THE TRANSLATED CONCEPTS ABOUT PRINT TEST BY MARIE CLAY WITH BILINGUAL KINDERGARTEN STUDENTS

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Chapter 1

Statement of the Problem

Purpose

The purpose of this study was to determine whether Marie Clay's test, Concepts About Print, can be translated into Spanish and used with Puerto Rican bilingual Kindergarten students to diagnose problems areas and predict reading success.

Need for the Study

There is no available copy of Marie Clay's test, Sand, in Spanish. The bilingual Hispanic children in preschool, as with their English speaking counterparts, appear to have difficulty with understanding the nature of the reading process. Clay's test, Concepts of Print, has been used successfully to assess the child's awareness of print and provide diagnostic feedback for planning remediation. It has also been helpful in predicting reading success. The test, translated to Spanish, could be used as a diagnostic tool or predictive tool for reading readiness just as the test, Sand, is used with English-speaking children.

Definition of Terms

The terms used in this study are defined as follows:

Cognitive clarity is the child's ability to understand the purpose and process of reading.

Cognition is the mental process or faculty by which knowledge is acquired.

Discrete means composed of distinct parts or discontinuous elements.

Perception is the process by means of which an organism receives and analyzes sensory information.

Limitations of the Study

This study consists of 20 kindergarten students in an urban school in upstate New York. The students in the study are all from Puerto Rico. There are twelve boys and eight girls randomly chosen from a bilingual classroom. The age range is five years, six months to seven years, two months. The length of time in the United States and exposure to English varies from child to child.

Summary

Since concepts about print are so important to reading it is imperative to discover the students' perceptions of the reading process, its purpose and function, as well as

their ability to handle the skills necessary to deal with printed language. Marie Clay's test, Concepts About Print, Sand, tests an area of print awareness that is necessary for the beginning reader. Since there is no available test in Spanish, it was necessary to translate Marie Clay's test, Sand, and administer it to bilingual Hispanic students to see if the same results could be obtained from the Spanish test.

Chapter II

Review of the Literature

Purpose

The purpose of this study was to determine if Marie Clay's test, Sand, could be translated to Spanish that can be understood by Puerto Rican bilingual kindergarten students and used for diagnostic purposes.

This chapter will review the literature in the following categories: Marie Clay's test Concepts About Print, Research relating to Preschoolers Concepts About Print, Developmental Stages of Print Awareness, and The Importance of Print Awareness to the Bilingual Child.

Marie Clay's Test Concepts About Print

In her doctoral dissertation Clay initiated the idea of testing preschool children's concepts of print to identify problem areas so remediation could begin at an early age (Clay, 1966). In 1972 she published the first Concepts About Print test as a diagnostic tool to uncover what processes a particular child controls and what s/he needs to be taught next (Clay, 1979). Clay felt that children must understand three basic notions in order to be a successful

reader: the first relates to the concepts of printed language, book orientation, that print is read, not pictures, letters must be identified, directionality and linearity, word identification, capitalization and punctuation. The second is the relationship between the spoken and written language to develop an ear for those terms and structures found primarily in print, and the third, is a sense of story (Roney & Craig, 1984).

Clay began her study with a Diagnostic Survey to uncover the problems that young children may have with the concepts of print. The Survey contains five parts: a record of reading behavior on books, a letter identification test, word tests, writing tests and concepts about print test. Together they should give some indication of the strengths and weaknesses of the student as well as how and what the student thinks about reading (Clay, 1972).

The Concepts About Print test, Sand (Clay, 1972) and the parallel test, Stones (Clay, 1979) have proved to be a sensitive indicator of one group of behaviors which support reading acquisition (Clay, 1979). The test has been separated from the multifaceted Diagnostic Survey of Clay and become a single test to indicate readiness for reading. Clay is not happy about this occurence because she insists that it measures only one aspect of learning during the early stages of reading acquisition (Clay, 1979). The test given in 1968 to forty urban children in New Zealand, has a

reliability of 0.95 (Clay, 1970) and a correlation with Word Reading of 0.79 (Clay, 1966).

Researchers have been testing the reliability of the Concepts About Print test since its first publication. Day and Perkins, 1979, (cited in Clay, 1979) used the Sand with fifty six Texas kindergartners and achieved similar statistical data. They concluded that the Sand can be used with American children to diagnose and predict reading success. Fryczynski's study in 1981 (cited in Feeley, 1983) found a moderate positive correlation between her survey of informal reading and writing activities in the home and scores onSand. This supports the findings of Durkin, 1966 and Clark, 1976 (cited in Widay, 1985) that home environment is essential to the child's development of reading attitudes and concepts.

Reeves' study in 1982 (cited in Feeley, 1983) found a high positive correlation between Gates-MacGintie Reading Test and Sand. Harlin's study in 1984 tested one hundred and twenty-five primary grade children using the Sand. She found it correlated significantly with Comprehensive Tests of Basic Skills and the Metropolitan Readiness Tests and Metropolitan Achievement Tests. She consideredSand to be an effective predictor of reading achievement for primary grade children. The study measured changes in the development of print awareness across age and grade levels as well as time. She considered it to be especially helpful with

disadvantaged students for early diagnosis of problem areas (Harlin, 1984).

Johns' study in 1980 used Clay's test,Sand, with sixty first-graders who were above average, at average and below average in reading. Significant differences were found among the three groups of readers with the above average group scoring significantly higher than the other groups. The above-average readers were superior to below average readers in print-direction concepts, letter-word concepts and advanced-print concepts. The findings suggest that factors other than age may influence or affect the acquisition of print-related concepts. Ehri's study in 1979 (cited in Johns, 1980) suggests that awareness of concepts about print may interact with the reading acquisition process so that it exists as both a consequence of what has occurred and as a cause of further progress in reading. Johns states that Ehri may be correct. The findings offer additional support for the growing number of research studies which have sought to link the "cognitive clarity" theory and reading achievement. The above average students also have an above average grasp of the concepts of print and as they progress in reading their understanding of the concepts of print also improves.

Research Relating to Preschoolers Concepts About Print

Many recent studies have indicated that the road to literacy starts long before a child begins formal schooling and involves far more than just learning specific skills in letter recogniton and sound/symbol association. (Weiss & Hagen, 1988). Research has shed new light on the nature of the reading process and changed the direction of instruction from discrete units, for example, decoding, to a holistic approach. The emphasis has been on teaching perceptual skills often as isolated drills with no regard for the real purpose of reading which is to discover meaning from print. Reed (1986) states that,

> Dependency on naming colors, mastering letter names, matching rhyming words and other readiness activities are not real prerequisites for reading. Readiness skills are both harder to teach and harder to acquire than reading itself. (p.4).

Research has shown that some children arrive in school knowing how to read without the benefit of direct instruction. Durkin's 1966 study (cited in Carter and Stokes, 1982) investigated the characteristics of children who read before receiving formal instruction and led to research into the cognitive processes that may underlie this development. Clay's study in 1966 and Y. Goodman's in 1980

(cited in Carter and Stokes, 1982) observed children in order to understand their methods of assigning meaning to print and their awareness of the methods they used.

The number of researchers studying young children's acquisition of knowledge about written language and reading processes prior to reading instruction has grown steadily in recent years. Carter and Stokes in 1982 studied the characteristic achievements of children who have not yet begun formal instruction in reading but have begun to discover the significance of print. They found that young children display substantial metalinguistic awareness of their own approaches to print and the three distinct strategies of meaning, decoding, and memory used in learning to read. The children used the three strategies at different times and in different combinations. The successful readers used the three strategies interchangeably. They found that the strategies developed simultaneously but independently. Carter and Stokes suggested that since children can coordinate and discover these strategies by themselves it is important for an instructional method that could combine aspects of all three strategies so that the needs of individual children at different levels of development could be met.

Feeley, in 1983, tested preschoolers ranging in age from 2 to 5 years on the physical make-up of books, concepts and rules of print, parts of a story and comprehension. She

discovered that the five year olds were able to complete all the tasks and the younger children's ability decreased. While there appeared to be a developmental trend, there was considerable variation within age groups. Some two year olds were able to complete tasks that some four year olds were not able to do. She suggested that the home and preschool provide more exposure to print, colorful and inviting picture books, a comfortable area for reading and frequent periods in which the children are read to.

Experiences with environmental print help children arrive at the conclusion that print serves different functions in meaningful situations. (Clay, 1966; Y. Goodman, 1980; Hiebert, 1981; Mason, 1980) Weiss and Hagen in 1988 studied kindergartners' awareness of the functions of print by using actual reading material, for example, a storybook and newspaper, and asked the children to identify them. The kindergartners were able to identify the items and their functions in every case but the menu. This test can provide the classroom teacher with insight into children's experiences with a variety of printed materials and how children view their uses to convey meaning. Weiss and Hagen state, "Understanding why and for what purposes people read is a logical prerequisite for learning how to read." (1988, p. 578).

Developmental Stages of Print Awareness

Educators have been searching for a clear outline of how and when children develop concepts needed for reading success. They have been studying the preschool child to see if a pattern emerges that clearly denotes stages in the acquisition of skills needed for reading. Clay emphasized the need for cognitive awareness of print and its functions (Clay, 1972). Mason (1980) examined four year olds' strategies when reading and spelling words, their knowledge of letter names, and their ability to read signs and labels. She developed a three-level hierarchy for learning to read words. The first stage involves the ability to read signs and labels, indicating children's knowledge that objects and speech can be represented in print. The second stage, visual recognition, involved the ability to learn letter names and some letter-sound correspondence but little reading ability. The third was the ability to associate letters with sounds and apply this to reading. Mason was supported in her research by Hiebert, Cioffi, and Antonak, 1984. They examined the development of relations between several print-related concepts and concluded that young children have a sequence of acquiring knowledge of various print-related concepts and word reading much the same as Mason described. By the age of five, children's ability to discriminate both auditorally and visually preceeded their

knowledge of letter names and this preceeded their ability to apply letter-sound knowledge to reading, and their knowledge of the purposes of reading. Morris' study in 1983 (cited in Lomax & McGee) found that children who have developed a concept of a word revealed a greater knowledge of letter-sound relationships in their invented spellings than did children who had not developed this concept.

Lomax and McGee 1987 studied the interrelationships among knowledge of print, phonemic awareness, graphic awareness, grapheme-phoneme correspondence knowledge and word reading. They were expecting to supply further data to support the work of Goodman and Goodman, 1979 (cited in Lomax & McGee, 1987) who have argued that all dimensions of written language knowledge develop similarly, interrelatedly, and simultaneously. Lomax and McGee's study demonstrated that the concepts-about-print component of their study is an early-developing construct which precedes the acquisition of other print concepts. This supported the hierarchical model of literacy suggested by Mason, 1980. Lomax and McGee's results showed that some abilities were early-developing (concepts about print and graphic awareness), whereas other abilities emerged later, only in the five and six-year-olds. This finding lends credence to the belief that children entering school should be judged on developmental criteria not on chronological age as is done today (Ames, 1986). It also supports Piaget's theory that the stages of

intellectual developemnt follow each other not in strictly chronological order but in a sequential and orderly manner (Kirkland, 1978). One of the important findings of the study was that concepts about print directly as well as indirectly influence grapheme-phoneme correspondence knowledge. That is, developing an understanding of the underlying relationships between written text, oral text, and meaning seem to be an important precursor of the development of knowledge about letter-sound relationships (Lomax & McGee, 1987).

Huba and Kontos in 1983 attempted to explore four basic concepts of print. They were: language has a written symbol system; people write down their language for efficient communication, reading is a process by which one deciphers written language to obtain meaning, and written language can represent, in one-to-one correspondence, the words uttered by a speaker. They compared the results of their test with Sand by Marie Clay and found that the two instruments were measuring somewhat different constructs. They found that the practical, skill-oriented focus of the Sand test was more strongly related to performance on pre-reading skills than the more abstract, conceptual focus of their instrument. It did demonstrate, however, that children experiencing difficulty learning to read also exhibit lower print awareness scores that those more skilled in reading.

They concluded that print awareness may be, "entwined with the role of other reading-related knowledge and together they form precursors and consequences of formal reading instruction" (1983, p.16).

With the proliferation of research about print awareness since Clay's original study in 1966 some theories have emerged but the preschooler, for the most part, continues to be confused about the meaning and purpose of print.(Clay, 1972; Widay, 1985). The terms word, letter, sound, and sentence confuse them. Beginners often confuse writing with drawing and letter with number according to Swanson, 1982, (cited in Widay, 1985). This confusion may last well into the second year of school.

The Importance of Print Awareness for the Bilingual Child

Young children whose native language is English have a degree of cognitive confusion about the purpose of reading even with a rich literary home environment. The terminology, letter, word and sentence, leave them baffled, even if they have been read to since infancy. The child enters school and is exposed to totally different tasks and expectations than were required at home. For most children

frustration is apparent for at least the first year of formal schooling.

The plight of the bilingual child is worse. The term bilingual itself is misleading because the child may be orally dominant in the native language and minimally proficient in English or minimally proficient in both languages. Each child has a different level of oral proficiency in the native language and second language. Children who are exposed to print begin to organize the print environment in a similar way that they organized the speech environment. By using the print environment they conclude that print says something and has a function. In some bilingual communities there is a lack of environmental print in their native language. Goodman, Goodman and Flores in 1979 discussed the effects of this lack,

> They (the children) begin to know that written language has prestige and that some people think it is important. They know that some people can read and write and others cannot. They begin to get some understanding about how the literate members of the community are valued.(p. 28)

When the bilingual child begins formal schooling s/he is most often met with reading readiness programs that include pictures and worksheets combined with drills that appear to have no connection to the reading and writing that supposedly is being taught. This causes more confusion in

the bilingual child because of his/her weakness in the oral language of instruction. Reed states that readiness is a harmful exercise, especially for disadvantaged children, and it gives the child a message that reading is impossible to understand (Reed, 1986).

Goodman and Goodman in 1978 (cited in Goodman and Goodman, 1979) studied four different populations of bilingual children reading English. They found that there were no "linguistic incompetents." The reading tests and IQ tests turned out to be worse than useless in assessing the students. They blame the cultural inappropriateness of the tests, language mismatch, irrelevance of school tasks and the diversity of their experiences for the low scores on standardized tests.

Yetta Goodman in 1986 (cited in Dickinsen & Snow,1986) identified several 'roots of early literacy.' The most basic ability she considered is the awareness of print in context, the ability to make sense of print to which children naturally are exposed. She states that, "This competence develops early and is found in children from racially, linguistically, geographically and ethnically diverse backgrounds." (cited in Dickinson & Snow, 1986, p.30). The potential is present in bilingual children but the school environment must draw on their strengths.

The literature refers to the bilingual child as being "at risk" or disadvantaged. Dealing with the disadvantaged

bilingual student presents a special kind of challenge. Dickinson and Snow in 1986 studied kindergartners, from upper and lower social classes, on prereading and oral language skills. Clay's test, Sand, was used as part of the study and was divided into literacy and phonemic awareness. The children were from a high quality reading-oriented kindergarten. They found class-related differences on all the prereading measures which required careful attention to print (literacy, print decoding, print production). Despite the fact that all the children attended a high quality kindergarten the upper class children scored significantly higher than the lower class or "working class" children. However, there were no significant differences between classes when tested for environmental print or phonemic awareness. They attributed the difference to lack of literary stimulation in the home.

They also supported researchers who state that oral language provides the foundation for the development of reading ability. Goodman, Goodman and Flores in 1979 stated that as reading improves it will influence the oral production of the bilingual child which will then improve the reading competency.

Hetrick used Clay's test,Sand, to test kindergarten children considered "at risk." She considers an understanding of the purpose of the written language more critical to reading progress than isolated components of

reading. The results of her study showed that children expected words to be a label for pictures; articles and prepositions are not necessarily written; some phonetic relationship is used to write words and when children decoded they used it at the expense of meaning. The children gained the majority of their information from the pictures in the book. All understood front, back and page. The children all could indicate where the print was and all but one could show top and bottom of the page appropriately. Confusion appeared with the concepts of letter and word. All but one identified letters when asked but only four could block off a word. She agreed with other researchers that the child's development seems to be from the general to the specific (Hetrick, 1983).

The bilingual child may have an advantage over the monolingual child in developing the concept of word. Oren in 1981, conducted three tests to contrast the ability of bilingual and monolingual children to label and relabel objects. The bilingual children were in a preschool bilingual class. The bilingual children scored significantly better than the monolingual children.The conclusion was that preschool bilingual education stimulates children's cognitive development.

In a related study, Bialystok in 1987 reviewed three studies in which bilingual children showed more advanced understanding of some aspects of the concept of word than

their monolingual counterparts. The children were third graders who had been educated in English, but came from homes in which English was not spoken. They came from many linguistic backgrounds and had no educational advantage over their monolingual peers.

The study proved that the bilingual students had the ability to treat words as variable referents for familiar objects, and to speculate on the consequences of changing the usual names. They could dissociate between the name and the object because they had had experience doing this as they acquired a second language. "The ability to selectively attend to units of language and to apply specific processes to those units is an integral part of using language for advanced or specialized purposes, such as literacy." (Bialystok, 1987, p.138) Lesgold and Perfetti's 1981 study (cited in Bialystok, 1987) stated that reading involves a delicate balance between attending to forms and meanings, between sampling graphemic and semantic information, and assembling all these parts into some coherent and structured whole. It is in all these areas that bilingual children may be more advanced than monolingual children. (Bialystok, 1987).

It is interesting to note that the results were the same for the two studies even though there were several significant variables: the studies were performed six years apart, they dealt with children of disparate age,

kindergarten and third grade, and they dealt with populations that had experienced only English in formal education and those who experienced a bilingual preschool.

Further research is needed to examine the needs of the bilingual "at risk" student in order to better prepare him/her for success in reading. Outreach to the home to help the parents provide more literacy experiences is one of the major areas needing attention. Understanding of cultural differences and needs of disadvantaged students is a goal that should attempted by the teachers and staff in the schools where the children attend. Contact with print in all forms with a variety of functions should be the goal of any kindergarten but it is imperative with the bilingual disadvantaged student.

Summary

Research has shown that literacy begins at an early age. As children in a literate society become aware of their environment they begin to recognize that print has functions (Clay, 1966; Mason, 1980; Weiss & Hagen, 1988). The concepts of print that they acquire during preschool years depend heavily on their exposure to print in the home and society at large. The emphasis has shifted from perceptual development to cognitive development. Some researchers, led by Mason in 1980, believe that there are developmental

stages in the reading process. Initially the child reads signs and labels indicating a knowledge that objects and speech can be represented in print. Visual recognition, the ability to learn letter names and some letter-sound correspondence, follows the ability to "read" environmental print. Finally the child is able to associate letters with sounds and apply this to reading. Research by Hiebert, Cioffie and Antonak in 1984 and Lomax and McGee in 1987 supported Mason's findings.

Considering the importance of a child's concept about print, Marie Clay, in her doctoral dissertation in 1966, developed a test to help diagnose weaknesses in the child's concepts. The test has been widely researched and proven to be a good indicator of a child's print awareness and grasp of print techniques. It has also proven effective in predicting reading ability.

The English speaking child has a degree of cognitive confusion until s/he understands the meaning and purpose of print. The Puerto Rican bilingual child, considered "at risk" in the school community, needs to develop concepts of print in both languages. The print techniques of linearity, directionality, book orientation are the same in both languages. Identification of letters and phoneme-grapheme relationships need to be learned for two languages. The child needs exposure to print in both languages.

Oren, in 1981, and Bialystok, in 1987, discovered that the bilingual child may have an advantage over the monolingual child in developing some aspects of the concept of word. The bilingual child knows two words to refer to an object and therefore can attend to a unit of language, a word, with greater cognitive skill than the monolingual child.

Several researchers stated that the emphasis on perceptual skills in reading readiness was harmful to the bilingual child who does not understand the connection between the perceptual skills and reading and finds the "reading readiness" confusing (Reed, 1986). The child apparently is developing cognitive skills needed for reading as s/he is acquiring another language. Yetta Goodman (cited in Dickinson & Snow, 1986) discussed the 'roots of literacy' and stated that the ability to make sense of print to which children naturally are exposed is a competence that develops early and is found in children from diverse ethnic and linguistic backgrounds.

As oral language improves, the bilingual child will improve in reading and this will influence the oral production (Goodman, Goodman, & Flores, 1979). The same interaction takes place with concepts of print and reading. As reading improves the child's concepts of print also improve and therefore impact on his/her reading ability (Lomax & McGee, 1987).

Researchers generally agree that the bilingual children need much exposure to all varieties of printed material. They need to be read to in both languages to develop a sense of story that Marie Clay considers of primary importance for learning to read (cited in Roney & Craig, 1984).

Chapter III

The Research Design

Purpose

The purpose of this study was to determine whether Marie Clay's Concepts About Print test, Sand, can be translated into Spanish that Puerto Rican bilingual kindergartners can understand and used to diagnose problem areas and predict reading success.

Hypotheses

This study investigated the following null hypotheses for the bilingual kindergarten students.

1. There is no statistically significant difference between Clay's test, Sand, and the Spanish translation, as far as reliability is concerned.

2. There is no statistically significant relationship between age of the student and grade on the Sand test in Spanish.

3. The Spanish translation of Clay's Sand test is not able to statistically predict reading success.

Methodology

Subjects

The subjects of this study were twenty kindergarten students ranging in age from 5 years and 6 months to 6 years and 10 months. There were twelve boys and eight girls. They were randomly selected from a bilingual (Spanish and English) kindergarten in an urban school in Rochester, New York. They had varying degrees of proficiency in Spanish as well as English. All were from Puerto Rico and the most recent arrival had been in the United States since August, 1987. Spanish was spoken in all homes but code switching between Spanish and English is common in many homes.

Permission has been obtained from the City School District, the principal and the parents.

Instruments

Marie Clay's Concepts About Print test, Sand, was translated to Spanish and copied in the style of the English text. The translated text was placed over the English print to give the same appearance as the English Sand copy. Before the Spanish text was substituted for the English text, it was proofread by a Puerto Rican teacher and aide. The vocabulary was changed in several places to make the text more meaningful to the Puerto Rican students, but the meaning of the original text was not altered. The

inversions, line altering and letter reversals, were duplicated in the Spanish text.

Procedure

Interviews and testing were approximately twenty minutes per student and conducted by the interviewer. A circular table and chairs were provided at the end of the hall outside the classroom. There were various distractions but no other accomodations could be made, and it was far superior to the classroom setting.

The test was administered to two subjects prior to the testing in school to familarize the interviewer with the procedure. Three students, proficient in both languages, were tested initially and scores recorded on the Spanish test. The parallel test, Stones, was then administered in English to see if there was a large discrepancy on the scores. Since the subjects scored close to the same on both tests, the researcher decided to continue the study using the Spanish version.

The researcher spoke only in Spanish to the subjects to determine their ease with using the language while speaking to a non-native. The subjects were asked where they lived and to name the members of their family. They were also asked their birthday but the majority did not know and the dates were later taken from the files.

The procedure dictated by Marie Clay for use with the English version of the test was carefully followed. The exact words (in Spanish) were used and scoring method was the same. The procedure was altered for the children who did not understand some words or ideas in Spanish. English and Spanish were used with the majority of the children. The test was truly bilingual rather than monolingual, Spanish. The testing took place over a two week period in February, 1988.

Statistical Analysis

To determine the reliability of the Spanish test a Kuder Richardson was used. A Pearson-Product Moment statistic was calculated for the correlation of age and scores on the test. A similar correlation was used to correlate the Concepts of Print test and the California Achievement Test given in May. This should determine the validity of the Spanish test. An item analysis was done to aid the teachers in individual and group diagnosis. The 24 items on the Sand test were classified by four patterns used by Johns in his 1980 study.

Summary

Twenty Puerto Rican kindergarten students were tested with a Spanish translation of Marie Clay's Concepts About Print test, Sand. Data were analyzed for statistically

significant relationships to determine reliability and validity of the Spanish test. An item analysis was done, and the items were classified by four patterns.

Chapter IV

Analysis of Data

Purpose

The purpose of this study is to determine whether Marie Clay's test, Concepts About Print, Sand, can be translated into Spanish and used with Puerto Rican bilingual kindergarten students to diagnose problem areas and predict reading success.

Findings and Interpretations

The first null hypothesis was that there would be no significant difference between Clay's Sand test and the Spanish translation as far as reliability is concerned. The Kuder Richardson statistic for reliability was calculated, and the reliability is .81. Therefore, the null hypothesis is not rejected. There is no statistically significant difference between the two tests.

The second null hypothesis was that there would be no significant relationship between age of the student and score on the Spanish test. The Pearson Product-Moment statistic was calculated and the correlation is .60. There is not a strong relationship between age and score on the test.

The third null hypothesis was that the Spanish Sand test is not able to predict reading success. The results of the California Achievement Test given in May were correlated with the results of the Spanish Sand test. There was a noticable difference between the Word Reading and Sentence Reading for most individuals so the statistic was calculated for both items. The Pearson Product-Moment statistic was calculated and the correlation was .50 for Word Reading and .05 for Sentence Reading. The statistical data were moderate for Word Reading but too low to be a meaningful correlation for Sentence Reading. The Spanish Sand test can be used to predict word reading but not sentence reading ability in Puerto Rican bilingual kindergarten students.

The scoring sheet for Marie Clay's Sand test is in Appendix A. An item analysis was performed and the data are in Appendix B. Percentages are provided for each item. Johns in 1980 divided the items on the test into four patterns which have been duplicated in this study. The patterns are: Book Orientation Concepts, Print-Direction Concepts, Letter-word Concepts and Advanced-Print Concepts. The results are in Table 1.

Table 1

Percentage of students passing items on Spanish Sand test.

Patterns and Items	Percentage Passing
Book-orientation concepts: Items 1, 2, 11	93%
Print-direction concepts: Items 3, 4, 5, 6, 7, 9, 16	66%
Letter-word concepts: Items 8, 19, 21, 22, 23, 24	65%
Advanced-print concepts: Items 10, 12, 13, 14, 15, 17, 18, 20	4%

Summary

The findings of this study failed to reject the null hypothesis number one. There is no significant difference between Clay's Sand test and the Spanish translation as far a reliability is concerned. Clay's Sand test had a reliability of .89 using a Kuder Richardson statistic. The

Spanish translation has a reliability of .81 using the same statistic.

There was a moderate correlation between age and scores on the Spanish Sand test indicating that factors other than age may influence the acquisition of print related concepts.

The Spanish Sand test was able to predict reading success for word reading but not sentence reading.

Using Johns' patterns for analyzing the item analysis it is apparent that the students scored high on book-orientation concepts and very low on the advanced-print concepts, for example, identification of altered words. The students in the study scored significantly lower, in advanced-print concepts, than the students in Johns' study. The bilingual students scored well on the print-direction concepts, Johns' second pattern, but had difficulty with the items in the pattern that were not specifically print-direction items. They only scored 40% right on the word by word matching question. Their fingers were moving in the correct direction but they were not attempting to identify whole units, i.e. words. Only 20% of the bilingual students knew the word for "period." They did not recognize the punctuation marks as having any meaning in either language. One child did try to guess and one knew the term "period." They were given credit if they said "stop" or any phrase that indicated they knew the meaning of the period.

Only four students responded correctly. None understood the meaning or terminology for the comma or question mark.

In the third pattern, letter-word concepts, the students in the study had difficulty with the concept of word. When asked to locate one word and then two words they often covered letters instead of words. Some were able to locate one word but were confused when asked to locate two words. Both languages were used but still the concept was confusing. The concepts of first and last were also confusing. The majority understood the word "first" and misunderstood the word "last." They identified the first letter correctly but when asked for the last letter they were unsure that their answer to "first" had been correct. Again both languages were used but there was confusion. The punctuation included in this pattern was missed by every student. They were asked to explain quotation marks and were given credit if they said, "Talking" or any appropriate explanation. The most advanced students refused to guess at the meaning. The others assumed that it was a mistake in the print.

According to Clay's study in 1970 (cited in Clay, 1979), the punctuation marks are a later developing concept and identification can be expected at age seven and beyond. The concepts of letter, word and punctuation marks are not stabilized for some students even after the first year of reading instruction (Yaden, 1984).

Chapter V

Conclusions and Implications

Purpose

The purpose of this study was to determine whether Marie Clay's Concepts About Print test, Sand, can be translated into Spanish that can be understood by Puerto Rican bilingual kindergarten students and used to diagnose problem areas and predict reading success.

Conclusions

The results of this study show that the Spanish translation of Marie Clay's Concepts About Print test, Sand, is a reliable instrument for measuring Puerto Rican bilingual kindergarten students' awareness of print. Based on the data obtained through the study the following conclusions were drawn:

1. The Spanish translation of Sand is a reliable instrument that can be used to uncover Puerto Rican bilingual kindergarten students' concepts of print.

2. There is a moderate relationship between the age of the student and the score on the Spanish translation of the

Sand test.

3. The translated test has the ability to predict reading success on the California Achievement Test in word reading but not in sentence reading.

4. An item analysis can be used to diagnose problem areas for the group as well as the individual.

5. Using both languages, the test is able to isolate areas of confusion that cannot be mistaken for linguistic problems.

6. The results of this study seem to conform to Mason's developmental stages. The students appear to be in the second stage of development where they are learning letter names and some letter-sound correspondence but little reading ability. The students in the third stage, the application to reading, were superior to the others in their understanding of the meaning of print.

These conclusions apply specifically to the population of the school but can be generalized to other matching populations.

Implications for Research

This study dealt with a small testing population of Puerto Rican kindergarten students. To confirm the results of this study a larger sample of students is necessary. Various linguistic populations could be studied with the

test, Sand, translated to their language. This would confirm the findings that appear to be universal and help establish developmental stages of print acquisition. More research is needed to determine if these stages of development are accurate and to understand how to help the student make the necessary transaction from one stage to the next.

This study has substantiated the previous research concerning the presence of cognitive confusion in young children as they learn to read. Research needs to address this problem in more detail and determine the effect of that confusion on subsequent reading achievement. The concepts that the children understood in Spanish were also understood in English and those they did not understand could not be explained in either language. The confusion therefore did not result from language deficiency but rather from some other source. This may assist the researchers who are trying to determine the role of language interference in students with reading problems. Research could determine the effective methods of teaching bilingual children the print terminology to help clarify the print concepts that are confusing. Literacy acquisition needs to be researched to determine more precisely the role of various concepts about print as related to children's learning about written language (Lomax, 1987).

One of the major problems facing teachers with bilingual students is the lack of assessment tools to determine if their reading problems are linguistically based or have their origin in some other area. The Sand can be used with the translated form to determine if Puerto Rican bilingual children have a confusion of concepts which are non-linguistic. Hetrick, in 1983, found the test helpful for identifying potential learning problems because of the reversed letters and inverted pictures as well as the finger pointing needed in the test.

Implications for Classroom Practice

The Concepts About Print test, Sand, in translated version, can be used successfully with Puerto Rican bilingual students to diagnose problems with concepts of print and predict reading success. The test can be administered to kindergarten students and early remediation can be begun. The results of the test can give the classroom teacher direction for effectively teaching about concepts of print. The Sand has been used with educationally disadvantaged students and found to be especially good for early diagnosis.

Many reading readiness programs emphasize perceptual skills and spend time on worksheets and drills. The child in a remediation program will spend even more time on skills development that s/he perceives as having no relation to

reading. Much of reading research data has not substantiated the validity of reading readiness skills and how they are integrated into obtaining meaning from written text (Goodman, Goodman & Flores, 1979; Hetrick, 1983; McKenzie, 1986; Reed, 1986; Spicola, 1985). The same researchers feel that too much emphasis on isolated components of reading and writing can lead to isolated, uncorrelated skills and apathetic students. Holdaway (cited in Potter, 1986) referred to the school experience as "cognitively fractioned."

Expectations are reduced for the bilingual "at risk" child. Instruction is slowed down and the concept of catching up with peers is not present. Olson (1987) reported on an experiment in California with two schools that had a high percentage of linguistically different students that were considered "at risk." The schoolwide plan is to replace the remedial curriculum with one heavily weighted toward the use of language, that is, emphasizing reading, writing, speaking and listening. Education will be related to the child's daily life and unrelated skills teaching will be abolished. Contracts will be negotiated between parents, child and school. Diagnostic assessments will be done monthly to help teachers know how students are progressing.

The study presented here showed that children are confused about the meanings of letter and word. In 1970

Downing (cited in Widay, 1985) stated that teachers use terms such as letter, word and sentence but some children do not understand the meaning of these terms and this can result in a state of cognitive confusion. Teachers should help students learn the difference between letters and words and this may help them learn to focus attention on the appropriate aspects of the learning task (Johns, 1980).

Ashton-Warner in 1963 introduced writing for the young child to help him/her understand the connection between speech and print. She had much success with bilingual Maiori children. Since that time the language experience approach has been tested and found valuable with many diverse groups of children (Clay, 1979; Graves, 1981; Spicola, 1985; Widay, 1985). Widay's study in 1985 showed that language experience students showed significantly better responses than phonics students to technical strategies and terminology.

Bilingual students need to explore various printed materials to understand the functions of print, because understanding why and for what purposes people read is a logical prerequisite for learning how to read (Spicola, 1985; Weiss & Hagen, 1988). Reading materials should include newspapers, TV Guide and relevant magazines, newspapers with advertizing supplements, menus, letters and recipes as well as picture and story books.

Reading aloud in the classroom is a central factor to promote good attitudes toward reading and a familiarity with the structure and vocabulary of the language (Trelease, 1985; McKenzie, 1986). It also helps the student understand the connection between speech and print. For the disadvantaged child often this is not done in the home before the child begins school so must be supplemented by the school. Researchers are in agreement that the interaction between parent and child in the home is crucial to the development of competence with print.

Outreach to the parents is a particular problem for the school with linguistically diverse students. Home visits are more effective than written material sent home to a family that may be illiterate in English. Ramirez (1988), writing about outreach to Hispanic families, mentions teachers and church leaders as respected persons in the Hispanic community.

Summary

The Puerto Rican bilingual student displays a cognitive confusion with regard to some concepts of print. Early testing can lead to early diagnosis and remediation. Clay's Concepts about Print test, Sand, and the Spanish translation can measure some aspects of a child's concepts of print. It should be supplemented by a story retelling test to measure

listening and speaking ability and a writing experience. Together the tests would give a more accurate diagnosis of problem areas with print.

The most effective means of demonstrating the relationship between speech and print is to immerse the child in many varieties of print, e.g. storybooks, newspapers and magazines. The child comes to school with the ability to 'read' the print in his/her environment. The bilingual child also has the advantage of knowing several names for familiar objects. The responsibility of the school is to enhance this knowledge and build on it. A curriculum rich in language experiences of reading, writing, speaking and listening may help the bilingual child discover the meaning and function of print.

Outreach to the home, even though difficult, could provide a means to inform the parents of the need for models of readers and further experience with print.

References

Ames, L. (1986, Summer). Ready or Not. American Educator, 30-33.

Ashton-Warner, S. (1963). Teacher. New York: Simon and Schuster.

Bialystok, E. (1987). Development of Word Concept by Bilingual Children. Scientific Study of Language Acquisition, 9, 133-140.

Carter, A., & Stokes, W. (1982). What Children Know About Reading Before They Can Read. Journal of Education, 164, 173-184.

Clay, M. (1966). Emergent Reading Behavior. Unpublished doctoral dissertation, University of Auckland Library, New Zealand.

Clay, M. (1972). Sand. Portsmouth, NH: Heinemann.

Clay, M. (1972). Stones. Portsmouth, NH: Heinemann.

Clay, M. (1979). The Early Detection of Reading Difficulties: a Diagnostic Procedure and Reading Recovery Procedures (3rd ed.). Portsmouth, NH: Heinemann.

Dickinson, D., & Snow, C. (1986) Interrelationships among

Prereading and Oral Language Skills in Kindergarteners from Two Social Classes. (ERIC Document Reproduction Service No. ED 272 860).

Feeley, J. (1983, May). What do Preschoolers Know about Print in Books? Paper presented at the Annual Meeting of the International Reading Association, Anaheim, CA.

Goodman, K., Goodman, Y. & Flores, B. (1979). Reading in the Bilingual Classroom (Library of Congress No. 79-84373) Rosalyn, Virginia, National Clearinghouse for Bilingual Education.

Graves, D. (1983). Patterns of Child Control of the Writing Process. In R. D. Walshe (Ed.), Donald Graves in Australia- "Children want to write..." (pp.17-29). Portsmouth, NH: Heinemann Educational Books, Inc.

Harlin, R. (1984, November). What Do Prereaders Know about Print? Paper presented at the Annual Conference of the New York State Reading Association (18th, Kiamesha Lake, NY).

Hiebert, E. (1981). Developmental patterns and interrelationships of preschool children's print awareness. Reading Research Quarterly, 16(2), 236-260.

Hiebert, E., Cioffi, G., & Antonak, R. F. (1984). A

developmental sequence in preschool children's acquisition of reading readiness skills and print awareness concepts. Journal of Applied Developmental Psychology, 5, 115-126.

Hetrick, E. (1983, April). Concepts of Print in Kindergarten "At Risk" Children. Paper presented at the Annual International Convention of the Council for Exceptional Children, Detroit, MI.

Johns, J. (1980). First Graders' Concepts About Print, Reading Research Quarterly, 15(4), 529-549.

Kirkland, E. (1978). Piagetian Interpretation of Beginning Reading Instruction. The Reading Teacher, 31(5),497-503.

Kontos, S., & Huba, M. (1983, April). The Development and Function of Print Awareness. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Detroit, MI.

Lomax, R., & McGee, L. (1986). Young Children's Concepts about Print and Reading: Toward a Model of Word Reading Acquisition. Reading Research Quarterly, 22 (2), 237-256.

Mason, J. (1980). When do Children Begin to read: An Exploration of Four Year Old Children's Letter and Word

Reading Competencies. Reading Research Quarterly, 15(2), 203-227.

McKenzie, M. (1986, May). The Problem of Underachievement in School. Paper presented at the Annual Meeting of the World Congress on Reading of the International Reading Association, London, England.

Oren, D. (1981). Cognitive Advantages of Bilingual Children Related to Labeling Ability. Journal of Educational Research, 74 (3), 163-169.

Olson, L. (1987, June). Stopping Students from Getting Behinder and Behinder. Education Week, 7(37), 26,27.

Potter, G. (1986). Early Literacy Development - It's Time to Align the Curriculum with Children's Developmental Stages. The Reading Teacher, 39, 628-631.

Ramirez, B. (1988, Summer). Culturally and Linguistically Diverse Children. Teaching Exceptional Children, 20(4), 47-48.

Reed, M. (1986). Reading Readiness and the Disadvantaged Child. (ERIC Document Reproduction Service No. ED276972).

Roney, R. & Craig, J. (1984, November). Background Experience is the Foundation of Success in Learning to Read. The Reading Teacher, 38 (2), 196-199.

Spicola, R., & Griffin, M. (1985, January). The Minority Child: Strategies for Literacy Development. Paper presented at the Annual Meeting of the Southwest Regional Conference of the International Reading Association, Albuquerque, NM.

Trelease, J. (1985). The Read-Aloud Handbook (rev. ed.). New York: Viking Penguin.

Weiss, M. J. & Hagen, R. (1988, February). A Key to Literacy: Kindergartners' Awareness of the Functions of Print. The Reading Teacher, 41(6), 574-578.

Widay, E.(1985). A Study of Children's Perceptions About Reading in Relation to Various Reading Instructional Programs. Unpublished master's thesis, State University of New York at Brockport.

Yaden, D. (1984, April). First Graders' Print Awareness as Related to Reading Achievement, Intelligence and Gender. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

APPENDIX A

SCORE SHEET FOR MARIE CLAY'S CONCEPTS ABOUT PRINT TEST

CONCEPTS ABOUT PRINT SCORE SHEET

Date:_____

Name:_____ Age:_____ TEST SCORE: /24

Recorder:_____ Date of Birth:_____ STANINE GROUP:

PAGE	SCORE	ITEM	COMMENT
Cover		1.Front of book	
2/3		2.Print contains message	
4/5 4/5 4/5 4/5		3.Where to start 4.Which way to go 5.Return sweep to left 6.Word by word matching	
6		7.First and last concept	
7		8.Bottom of picture	
8/9		9.Begin 'The' (Sand) or 'I' (Stones) bottom line, top OR turn book	
10/11		10.Line order altered	
12/13 12/13 12/13		11.Left page before right 12.One change in word order 13.One change in letter order	
14/15 14/15		14.One change in letter order 15.Meaning of ?	
16/17 16/17 16/17 16/17		16.Meaning of full stop 17.Meaning of comma 18.Meaning of quotation marks 19.Locate M m H h (Sand) OR T t B b (Stones)	
18/19		20.Reversible words was, no	
20 20 20 20		21.One letter: two letters 22.One word: two words 23.First and last letter of word 24.Capital letter	

APPENDIX B

ITEM ANALYSIS OF SPANISH SAND TEST

Table 1

ITEM ANALYSIS OF SPANISH SAND TEST - Items wrong

	Subjects in Test																			
ITEM	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1					X															
2							X													
3							X													
4							X													
5							X													
6		X	X		X		X	X		X	X	X		X		X			X	X
7		X		X			X		X	X	X		X		X				X	X
8		X	X																	
9			X																	
10		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11		X					X													
12		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16		X	X	X	X		X	X	X	X	X	X		X		X	X		X	X
17		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19		X		X		X	X		X	X	X	X	X	X		X	X	X	X	
20								X								X		X		
21		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
22				X										X	X		X	X		
23		X	X	X	X	X			X		X				X	X	X	X		X
24				X	X			X	X	X	X		X					X	X	X	X